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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.              | CONFIRMATION NO.       |
|---|-------------|----------------------|----------------------------------|------------------------|
| 10/751,066  | 01/05/2004  | Shu-Heng Sun         | LP3004-3836                      | 1271                   |
| 7590<br>SHU-HENG SUN<br>235 Chung - Ho<br>Box 8-24<br>Taipei,<br>TAIWAN |             | 06/25/2007           | EXAMINER<br>RODRIGUEZ, WILLIAM H |                        |
|   |             |                      | ART UNIT<br>3746                 | PAPER NUMBER           |
|   |             |                      | MAIL DATE<br>06/25/2007          | DELIVERY MODE<br>PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/751,066

Applicant(s)

SUN, SHU-HENG

Examiner

William H. Rodriguez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                               | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                      | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

### DETAILED ACTION

This is the first office action in response to the above identified patent application filed on 01/05/2004.

#### *Specification*

1. The disclosure is objected to under 37 CFR 1.71, as being so incomprehensible as to preclude a reasonable search of the prior art by the examiner. For example, the following items are not understood:

In page 1 and throughout the specification, “the combustion is completely and **no waste air generates**; the **thermal energy ...is stored in the explosive air storage tank**; **no energy lose** occurs since no tube is used to transfer the energy”. It is unclear how there can be no thermal energy losses because there is going to be heat transfer losses between the hot component (combustion chamber/air explosive tank) with the outside environment at a much colder temperature. Further, it is unclear how explosive energy can continuously be stored in the “air storage tank” and still prevent the “air storage tank” from not exploding.

In page 4 lines 5-7, “an air compressor...to supply **air ...for moisturizing liquid fuel**; the **moisture is injected into the explosive air storage tank**”. It is unclear how can the compressed air be used to moisturize a liquid fuel. Also, it is unclear how moisture can be used to generate explosive energy.

In page 4 lines 17-18, “**the explosive air storage tank is to replace the current used boiler of a steam machine**”. In page 4 lines 23-24, “**the explosive air storage tank is like an air box in the steam machine**”. It is unclear how “an explosive air storage tank” that generates “heated air” can replace the boiler of a steam turbine.

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In page 5 lines 2-3, "the exploded fire in the water pump is injected by the moisture so as to **generate steam**". It is very unclear what applicant means by this recitation.

In page 6 lines 2, "**the heated air** generated in the present invention can be used to push a machine". It is unclear what exactly the "explosive air storage tank" generates "heated air", combustion products due to the combustion of air with oil fuel, or steam, or?.

Applicant is required to submit an amendment which clarifies the disclosure so that the examiner may make a proper comparison of the invention with the prior art.

Applicant should be careful not to introduce any new matter into the disclosure (i.e., matter which is not supported by the disclosure as originally filed).

2. A preliminary examination of this application reveals that it includes terminology which is so different from that which is generally accepted in the art to which this invention pertains that a proper search of the prior art cannot be made. *For example: "explosive air storage tank; air for moisturizing liquid fuel; heated air; air explosion machine". See for more details paragraphs 8-15 of this office action.*

Applicant is required to provide a clarification of these matters or correlation with art-accepted terminology so that a proper comparison with the prior art can be made. Applicant should be careful not to introduce any new matter into the disclosure (i.e., matter which is not supported by the disclosure as originally filed).

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

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The following title is suggested: --Liquid Fuel Combustion Chamber Having Water Injection--.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. *Claims 1-5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.* It is unclear how applicant uses compressed air to moisturize a liquid fuel, then using said moisturize mixture to generate heated air within the explosion air machine. It is unclear how said explosion air machine can replace a boiler of a steam turbine. It is unclear how the invention can claim to have no waste air generated when at the same time it is claimed that the invention generates heated air. It is unclear how the invention can claim to have no energy losses when some energy is going to be loss as heat due to heat transfer between the combustion chamber and the environment which is at a colder temperature. The specification is very vague and indefinite making it difficult to understand what applicant claims as the invention. Also, the specification uses terminology which is so different from that which is generally accepted in the art to which this invention pertains that a proper search of the prior art cannot be made.

Based on the vague disclosed specification, the examiner has understood the claimed invention to be: a combustion chamber using liquid fuel, said liquid fuel being

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atomized by compressed air, the burning of said gasified fuel with air generating combustion products, said combustion products being cooled by injection of water into said combustion chamber. Basically, as understood from the vague disclosed specification, applicant is claiming to be the inventor of the well and old known gas turbine combustor.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited.

8. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). For instance,

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9. The term “air used for moisturizing liquid fuel” in claims 1-5 is used by the claim to mean “compressed air is used to atomize liquid fuel”. The term is indefinite because the specification does not clearly redefine the term. Appropriate correction is required.

10. The term “heated air” in the specification/claims is used by the claim to mean “combustion products”. The term is indefinite because the specification does not clearly redefine the term. Appropriate correction is required.

11. The term “moisture injection hole” in claims 1-5 is used by the claim to mean “water injection nozzle”. The term is indefinite because the specification does not clearly redefine the term. Appropriate correction is required.

12. The term “explosive air storage tank” in claims 1-5 is used by the claim to mean “combustion chamber”. The term is indefinite because the specification does not clearly redefine the term. Appropriate correction is required.

13. The term “air nozzle” in claims 1-5 is used by the claim to mean “exhaust nozzle”. The term is indefinite because the specification does not clearly redefine the term. Appropriate correction is required.

14. The term “oil injecting holes” in claims 1-5 is used by the claim to mean “fuel injection nozzles”. The term is indefinite because the specification does not clearly redefine the term. Appropriate correction is required.

15. The term “main switch” in claims 1-5 is used by the claim to mean “main valve”. The term is indefinite because the specification does not clearly redefine the term. Appropriate correction is required.

Examiner requests a new specification and a new set of claims conforming with current U.S. practice and that uses terminology which is consistent with the generally

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accepted meaning in the art to which this invention pertains. Also, the above 112 1<sup>st</sup> and 2<sup>nd</sup> paragraph rejections need to be addressed when rewriting the specification and claims.

***Claim Rejections - 35 USC § 102***

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

17. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Fox (US 4,385,661).

Fox (particularly figures 1 and 4) teaches the invention as claimed and as disclosed and particularly: a combustion chamber using liquid fuel (oil flowing through fuel supply line 8), said combustion chamber having an outward chambered front surface (typical for this type for combustors—fuel, air and water injection side) and a tapered rear surface (exhaust side), said liquid fuel being atomized by compressed air being compressed in an air compressor (not shown but inherent), the burning of said gasified fuel with air generating combustion products, said combustion products being cooled by injection of water (flowing through pipe 10) into said combustion chamber, said water being injected into said combustion chamber through a plurality of water injection ports 24, an igniter 12, a valve 28 located at the rear of the combustion chamber for controlling the release of combustion products, a fuel control valve 75, an air control valve 76 and a water control valve 77.



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18. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Parkes (US 4,174,941).

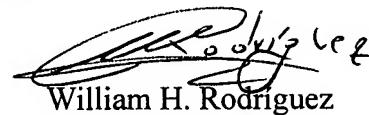
Parkes (particularly figures 1 and 2) teaches the invention as claimed and as disclosed and particularly: a combustion chamber using liquid fuel (oil, cl. 1 ll 65), said combustion chamber having an outward chambered front surface (typical for this type for combustors—fuel, air and water injection side) and a rear surface (exhaust side), said liquid fuel being atomized by compressed air being compressed in an air compressor (not shown but inherent), an igniter (inherent), a valve 17 located at the rear of the combustion chamber for controlling the release of combustion products, a fuel control valve (inherent), and an air control valve (cl. 4 ll. 14-18).

### ***Contact information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Rodríguez whose telephone number is 571-272-4831. The examiner can normally be reached on Monday-Friday 7:30 am to 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached on 571-272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



William H. Rodriguez  
Primary Examiner  
Art Unit 3746

5/11/07